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High-throughput method for isolating plasmid DNA with reduced lipopolysaccharide content.

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Isolating plasmid DNA from bacteria is a fundamental step in molecular biology. I is often accomplished by an alkaline lysis of bacteria and the subsequent adsorptio of nucleic acids to silica oxide in the presence of chaotropic substances. Here we show that the addition of such chaotropic reagents is not required for the efficient DNA isolation with silica oxide. This surprising finding allowed us to purify plasn DNA with significantly less lipopolysaccharides (LPS), which is otherwise a common bacterial contaminant of silica oxide-isolated DNA and inhibits subseque applications. In addition, we have implemented a precipitation step that altogether leads to a reduction of the LPS content by a factor of 900 relative to published methods. Our novel protocol facilitates an inexpensive high-throughput analysis of pure plasmids in a 96-well format without the addition of hazardous reagents.

Publication Types:
- Technical report

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